



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/700,367 | 11/15/2000 | Rainer Karer | 0775/000003 | 6131 |

26474 7590 04/17/2006

NOVAK DRUCE DELUCA & QUIGG, LLP
1300 EYE STREET NW
SUITE 400 EAST TOWER
WASHINGTON, DC 20005

| |
|----------|
| EXAMINER |
|----------|

NECKEL, ALEXA DOROSHENK

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

1764

DATE MAILED: 04/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/700,367

Applicant(s)

KARER ET AL.

Examiner

Alexa D. Neckel

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6-8 and 10-15 is/are pending in the application.
- 4a) Of the above claim(s) 11-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-8 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. This application contains claims 11-15 drawn to an invention nonelected with traverse in the paper filed October 25, 2004. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144). See MPEP § 821.01.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-4, 6 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Jorgensen et al. (6,113,862).

With respect to claims 1 and 3, Jorgensen et al. disclose an apparatus comprising:

a reactor (1) in the form of a vertical tube (see figures 1 and 2) with a region of transition (area below 3) in the lower section of the tube, followed by a reaction zone (3a) which is followed by a calming zone (4);

Art Unit: 1764

a recycle (circulation) line (5) with a compressor (6) and a heat exchanger (7);
a grid (gas distributor plate) (3) in the lower section/region of transition of the reactor (1) wherein more than 50% of the surface area is open space (col. 10, lines 1-3 and col. 4, lines 24-30); and

wherein there is no internal heat exchanger in the reactor (see figure 1).

With respect to claim 2, there is no distributor plate in the immediate area where the recycle line (5) connects to the reactor (1).

With respect to claim 3, Jorgensen et al. disclose wherein the distributor plate (3) has orifices which occupy more than 75% of the surface area (col. 4, lines 24-30 and col. 10, lines 1-3). Jorgensen et al's. statement of "greater than about 75% of its area open for gas flow" encompasses "more than 90%".

With respect to claim 4, Jorgensen et al. discloses evenly spaced openings (col. 6, lines 60-63) of the same size with flow deflectors (col. 5, lines 63-66) located in the region of transition/lower section (below 3) and as such, would inherently bring about a substantially homogeneous introduction of gas flow into the bed.

With respect to claim 6, Jorgensen et al. disclose wherein the reactor diameter can be between 2.4 and 5 m (col. 5, lines 18-19).

With respect to claim 10, Jorgensen et al. further discloses wherein the recycle gas may be passed through a cyclone separator prior to being introduced to a compressor (col. 7, lines 1-16).

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jorgensen et al. (6,113,862) in view of Lubbock (2,636,712).

With respect to claim 7 and 8, Jorgensen et al. fails to disclose a closable flap with holes at the region of transition (where the circulation inlet enters the reactor).

Lubbock teaches a slide valve (equivalent to a flap) with orifices (col. 2, lines 18-28) used to control the flow of solids in suspension (col. 1, lines 1-6). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the slide valve of Lubbock in the area where the circulation gas inlet (9) and the reactor (1) connect in order to control the amount of particles which would fall through the grid and into the circulation line (col. 2, lines 31-39).

With further respect to claim 8, Lubbock fails to disclose a specific size range for the orifices but Lubbock does disclose that the sizes of the orifices are variable (col. 2, lines 18-28). Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the orifice sizes necessary to obtain desired operational conditions (In re Boesch, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (In re Aller, 105 USPQ 223).

Response to Arguments

6. Applicant's arguments with respect to claims 1-4, 6-8 and 10 have been considered but are moot in view of the new ground(s) of rejection.

Upon further consideration, the examiner has applied the Jorgensen et al. reference under 35 USC 102(e) for claims 1-4, 6 and 10 above. Since the "region of transition" is only defined as "the lower section of the tube" in the claims and specification, the examiner has determined that the lower region, region below (3), in the tube (1) of Jorgensen et al. reads on the "region of transition" of the instant claims. The examiner has not found the "region of transition" to be explicitly defined in applicant's specification so as to exclude any additional distribution plates or other structural elements. It is noted that the claims contain the transitional language of "comprising" and therefore the claims are inclusive or open-ended and do not exclude additional, unrecited elements. See MPEP 2111.03.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexa D. Neckel whose telephone number is 571-272-1446. The examiner can normally be reached on Monday - Thursday from 9:00 AM - 7:30 PM.

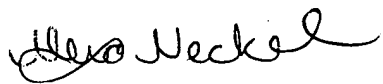
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1764

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alexa D. Neckel
Primary Examiner
Art Unit 1764

April 13, 2006


ALEXA DOROSHENK NECKEL
PRIMARY EXAMINER